Appendix H. Target Organs or Systems used in Acute, 8-Hour and chronic Hazard Index Calculations

The specific examples given below are those used in current REL derivations (as of April 2008). Obviously this list of specific endpoints is not exclusive, and may be augmented or amended as new RELs are developed. In order for the acute and chronic REL HI target organs to be consistent, developmental and reproductive, which were previously combined, have been separated into two categories. New target organ categories may need to be added, based on the toxicological data used to develop additional RELs.

TABLE H1. TARGET ORGANS OR SYSTEMS USED IN ACUTE, 8-HOUR AND CHRONIC HAZARD INDEX CALCULATIONS

Hazard Index target organ catergories	Specific health effects currently used in deriving at least one acute REL	Specific health effects currently used in deriving at least one chronic REL
Hematological System	Hemolysis; anemia; platelet abnormalities; effects on hematopoietic stem cells	Lowered red and white blood cell counts
Cardiovascular System	Aggravation of angina	Carboxyhemoglobin
Nervous System	Electroencephalograph (EEG) results; performance on neurobehavioral or neuropsychological tests; lightheadedness; clinical neurological exam; headache	EEG results; astrogliosis; performance on neurobehavioral tests; tremor; lightheadedness; memory disturbances; headache
Eyes	Irritation; histological changes to eye tissue	Irritation of eyes
Alimentary Tract	Hepatotoxicity; nausea; vomiting	Hepatotoxicity; kidney lesions; urinary porphyrins; liver enzymes
Immune System	Lymphocyte proliferation; host resistance to infection	Macrophage hyperplasia
Reproductive	Anovulation; decreased ovulation, preimplantation loss; altered copulatory behavior; azoospermia; oligospermia; spontaneous abortion	Testicular degeneration

TABLE H1. TARGET ORGANS OR SYSTEMS USED IN ACUTE, 8-HOUR AND CHRONIC HAZARD INDEX CALCULATIONS

Hazard Index target organ catergories	Specific health effects currently used in deriving at least one acute REL	Specific health effects currently used in deriving at least one chronic REL
Developmental	Fetotoxicity; teratogenicity, intrauterine growth retardation; altered behavior in offspring	Fetotoxicity; teratogenicity; developmental anomalies
Respiratory System	Irritation of nose and throat; increased mucus production; histological changes in nasal epithelium; histological changes in lung tissue; lung function following inhalation challenge	Irritation of nose and throat; hyperplasia of epithelium or nasal mucosa; histological changes in lung tissue; bronchiolar fibrosis; decreased pulmonary function
Skin	Irritation of skin	Potential use in eight-hour and chronic RELs, but no current examples.
Physiological response to odors	Headache; nausea	Potential use in eight-hour and chronic RELs, but no current examples
Endocrine System	Potential use in acute and eight-hour RELs, but no current examples	Thyroid enlargement
General Toxicity (e.g., failure to gain weight; weight loss)	Potential use in acute RELs, but no current examples	Potential use in eight-hour and chronic RELs, but no current examples